RACING TEACHES ITS LESSONS

MOTOR MANUFACTURERS LEARN MUCH FROM IT.

Strains on Cars So Severe That Construction Must Be of the Best—Stock Autos Therefore Show Most in Competitions History of the Industry Shows It.

"It is a significant fact that every manufacturer who has made a success of building and selling automobiles laid the foundation of his success in racing or endurance contests," says C. A. Emise of the Lozier Motor Company. "Even those manufacturers who have not taken any part in races during the last three or four years will be remembered by those familiar with the early history of automobiling as having been prominently identified with road and track events.

"The Packard Gray Wolf, the Peerless Green Dragon and the Winton Bullet were speedy cars that made early racing history in America, and their performances laid the foundation for worldwide publicity that has endured to this day. Looking over the field of successful foreign builders the names of the Mercedes, Renault, Fiat, Isotta and Panhard are prominent, and the success of every one of these concerns was undoubtedly due to their participation in speed contests.

"Thousands of dollars were spent annually in preparing for road and track races and experiments with types of cars to be used for this work. A number of these manufacturers have withdrawn from the racing game, but the effects of the results accomplished are unmistakably shown in their product.

"The thoughtless observer has frequently commented on the large expense involved in preparation for and participation in these contests, believing that the sole end and object of the manufacturer was to obtain advertising and publicity. The manufacturer knows that a deeper lesson was learned, and that had it not been for the invaluable experience gained through these contests the advertising value would have been practically lost had he not at the same time learned from these experiences how to build cars that would stand and endure. The penny wise builder confining his experiments to the shop and the miles of road surrounding his plant had only a slight conception of the hidden weaknesses of his car, and these weaknesses were only discovered by the purchaser after the car had been delivered to him and put into hard road service.

"The losses entailed in replacements, the loss of business and the great expense involved in making changes and carrying on new experiments only after thousands of dollars had been worked up into undesirable material and parts was far beyond the expense incurred by the far-sighted builder who in a few short months of racing had learned more of the requirements necessary to build a car destined for hard service than the stay at home builder could learn after experimenting with his customers through an entire season.

"No more certain guarantee can be given to the purchaser of an automobile than the assurance that that particular model has successfully withstood the abnormal strains of three or four months of hard long distance racing on road or track. The manufacturer engaging in racing contests knows that no obscure weakness can exist or his chances of victory are destroyed, and herein lies the great value of stock car racing, for if the contesting cars be built of special material and of different design from the regular stock car and the same construction be not applied to the car which is sold the purchaser loses much of the benefit which he would otherwise derive.

"The manufacturer who discontinues racing for any length of time also loses a great opportunity for gaining knowledge, for when a new model is produced new and untried features are introduced without the opportunity of learning in advance of the sale of this model whether or not these features will stand the actual test of hard service. No factory experimenting or no amount of laboratory work can guard against mistakes to the same extent that these mistakes can be avoided by knowledge gained through the strenuous double service which a stock car must endure in racing.

"In the case of the Lozier company and several other American manufacturers racing has been carried on entirely with stock models for the purpose of eliminating weaknesses in these particular models in the early stages of their manufacture. The first appearance of Lozier cars in racing was in a twenty-four hour race on a one mile track in Philadelphia in 1907. Two cars were entered and one finished, winning the race. It was estimated that the service to which this car was subjected for twenty-four hours, driving it at the highest possible motor speed without stoppage, and tearing around on the banked corners at full speed, was more severe than could be given a car in thousands of miles of hard service.

"Immediately after the race these cars were shipped to the factory for a thorough examination, and signs of weakness and evidences of wear were brought to light which otherwise would have remained undiscovered for many months. Cars in process of building were immediately strengthened at these points, and several months later similar twenty-four hour races were entered and the process repeated.

"In 1907, 1908 and 1909 six more of these twenty-four hour races were participated in by Lozier cars, in three instances two different stock models being used, and while the cars were successful in winning the majority of these races and establishing new world's records it was found in every single instance that it would have been possible to make greater mileage and an even more creditable record had certain structural features and materials been different. The lesson learned from each of these contests was employed to make more nearly perfect the next model.

"These most strenuous contests and this rapid process of improvement resulting therefrom showed their effect most unmistakably in the season just passed, when the new Lozier models entered in all of the principal events of the year not only won a majority of these contests but actually finished every race in which they started.

"Only one deduction can be drawn, and that is that the experience gained from long distance races places the manufacturer in position to perfect a car that will stand the most severe road use to which an automobile can be subjected. As a concrete illustration of the direct and quick result to be obtained an instance can be cited in one of the early twenty-four hour contests of 1909, where one of the Lozier cars early in the race was falling steadily to the rear.

"The spectators knew from past performances that the car should have more speed, but notwithstanding the fact that it was driven by a well known driver he was unable to hold his own against slower cars. Only the designer of the car and those interested knew that a new type of universal joint had been adopted. It had been tested in the factory and on the road as fully as possible and was apparently successful, but when the terrific strain of continuous sixty mile an hour gait was placed upon it the great vibration and pounding of the rough track developed the fact that while the part itself in theory and in actual practice was an improvement, sufficient provision had not been made for movement of the joint in certain directions.

"The joint had commenced to heat and seize and after a few hours running it was necessary to withdraw the car from the track and install a new part. For a few hours the car ran well again, but trouble again developed and the car instead of finishing among the leaders finished in fifth place.

"What was the direct benefit which the purchaser of one of these cars obtained? The building of these models had commenced in the factory, and without this race hundreds of them would have been sold and put into service, and in the course of two, four or six months the users of every one of these cars would have encountered similar trouble, causing delay, annoyance and expensive replacement. But with the immediate knowledge of the mistake which had been made a change was at once made in the construction, with the result that the improved form of universal joint remains in use to this day, and not a single instance of trouble has since been recorded.

"It is stated by the heads of several representative companies that the lessons which they have learned from racing with their stock models have enabled them to make greater progress toward ultimate perfection in one year than they could have done in three years of ordinary building for sale to the public without the lessons afforded by racing."

TO WIN A GLIDDEN TOUR.

What You Need and Why Told by Chalmers Driver.

The discussion which is going on at this time regarding the A. A. A. reliability tour for 1911 finds one a very much interested observer in William Bolger, who drove the Chalmers that won the Glidden trophy in 1910.

"I hope to compete in whatever reliability run the A. A. A. offers for this season," declares Bolger. "It makes no particular difference whether the leading trophy be the Glidden or some other—it's the tour that counts. I think this annual event of the A. A. A. is the most valuable motor test held anywhere.

"Three factors are necessary to the winning of a big endurance run," says Bolger. "They are a good car, good luck and intelligent driving. Of course good luck and good driving might bring a poor car through a short tour, but only a good car can get through a tour of sixteen days, covering 2,851 miles. On the other hand, either bad luck or careless driving could kill the chances of the finest cars in such a tour. Given the car and an even break in the luck it all comes down to the driving.

"Strange as it may seem, success in driving in a tour is not so much a question of control of the car by the driver as it is the control of the driver by the driver. Any one can learn in a few minutes how to control a car, letting in the clutch, shifting the gears, putting on the brakes and all that. But learning how to control oneself in the car is a different thing.

"An automobile is a temptation. In many ways it is the strongest temptation I know. It is a temptation which only a few can learn to resist. It is a temptation to speed. You can feel it in the throbbing motor. By just pressing a little button you can sail along faster than the wind. Once experience that sensation of speed and you always have a craving to experience it again.

"Hence you must be always guarding yourself, for if you give way to the desire for speed on an endurance run you are lost. Another car may come past you and throw up dust until you learn to like it. Then is when you must be patient. You must endure the unpleasant feeling that you are temporarily behind in the procession for the sake of the bigger prize you have a chance of winning later.

"The notice one gets for being the first in at the night controls is a nice thing, too and it is natural to want that publicity. When I first began driving in tours I thought myself pretty smart to get in first at the night controls. After a few disappointments at the end of the tours I came to the knowledge that it is seldom the car that makes the controls first which wins the big honor at the finish.

"Take it easy. That is the best advice I know how to give any one who thinks of entering a long tour. I have a superstition that a car has feelings a good deal like people have. I think a car can be worried just the same as a horse or a man can be worried. And just as a horse or man cannot do their best work when worried, so it is with a motor car. A good car has a way of taking it easy on its own account if only its driver will study it a bit and humor it along.

"An automobile ready for a tour represents just so much endurance and energy. It starts with 100 per cent. Each mile it is driven takes away a little bit of its energy and lessens by a fraction its chances of remaining in absolutely perfect shape. It is the driver's business to make his mileage on the smallest possible consumption of his car's capital of energy. He should drive as if every rod of the road were fatal to his car's success and yet he must do it without worrying his mount.

"I think many drivers have made the mistake of trying to hang on to their perfect technical scores too long. At a baseball game you often see the pitcher give a base on balls for the sake of a chance at a double play to retire the opposing side. Sometimes by taking a small technical penalty on the road you can save yourself many points in the technical examination at the finish.

"We really won the last Glidden tour in this way. Although my Chalmers kept its perfect score five days longer than any other car on the tour there came a day when we had to decide whether we would issue a base on balls, so to speak. We knew we could go ahead as we were without an adjustment, but finally decided we would take a light penalty rather than take chances of badly damaging our car later on. While we got a penalty which spoiled our perfect score at a time when the attention of the whole automobile country was focussed on our record still our stitch in time saved nine for in the technical examination following the tour we got less penalization than any of our rivals. If we hadn't made a few minor adjustments when we did our final showing would have been spoiled.

"I have driven some pretty hard tours, but the worst I ever drove was the 1910 Glidden tour. Positively it was a crime to ask a motor car to go over that route. I never saw machinery so abused as were the cars that went from Cincinnati to Chicago by way of Dallas in that tour. I don't think I would drive over that route again for $10,000. Any car that ever finished that tour has some mighty good stuff in it."